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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/671,973	09/28/2000	Geoffrey Owen Blandy	AUS9-2000-0572-US1	6988

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[REDACTED] EXAMINER

HARKNESS, CHARLES A

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2183

DATE MAILED: 09/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

PRG

Office Action Summary	Application No.	Applicant(s)
	09/671,973	BLANDY, GEOFFREY OWEN
	Examiner	Art Unit Charles A Harkness

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 September 2000.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,7-9,11,17,18,20 and 26-28 is/are rejected.
- 7) Claim(s) 2-6,10,12-16,19,21-25 and 29 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 September 2000 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The applicant or their representatives are urged to review the specification and submit corrections for all mistakes of a grammatical, clerical, or typographical nature.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations in the claims dealing with a range of branch addresses, the limitations mentioning using the registers to set the predicate registers, and the limitations dealing with the mask must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

3. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 2, 12, and 21 are all of their dependent claims are objected to for the following reasons: Its unclear in the claims that $2^{**}(\text{lowpredicate-low value})$ means 2 to the power of (lowpredicate-low value). Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In independent claims 1, 11, and 29, Applicant has claimed "loading a plurality of predicate registers with branch addresses" while the invention according to the specification values from regA is moved to the predicate register set, where predicate registers are only one bit registers, indicating whether the instruction should be executed or not (Spec. page 13 lines 8-24). There is no description of any branch addresses being loaded into any registers found in the specification. It is assumed that the claim is being limited by loading a single branch address, which is greater than 1 bit, into a single one bit predicate register.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1, 9, 11, 18, 20, and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Maslennikov et al, U.S. Patent Number 6,412,105 (herein referred to as Maslennikov).

8. Referring to claims 1, 11, and 20 Maslennikov has taught a method of implementing a switch instruction in an IA64 architecture based data processing device, comprising:

Receiving a call to the switch instruction, the call including one or more parameters for the switch instruction (Maslennikov figure 1 column 3 lines 21-40; inherently the switch instruction would have to be called);

Loading a plurality of predicate registers with branch addresses based on the one or more parameters (Maslennikov figure 1 column 3 lines 32-40; the predicate registers would inherently be loaded with the parameters that the compiler assigned to show which branch of the switch would be the correct path); and

Calling an instruction associated with one of the branch addresses based on values of the plurality of predicate registers (Maslennikov figure 1 column 3 lines 32-40; which ever branch instruction of the switch statement has its predicate value set to true will be the branch that is called).

9. Referring to claims 9, 18, and 28 Maslennikov has taught wherein the switch instruction is a dense switch statement in C (Maslennikov column 2 lines 13-30, column 4 lines 4-21, figure 1, abstract).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 7-8, 17, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maslennikov in view of The Java Virtual Machine Specification (herein referred to as Java).

11. Referring to claims 7, 17, and 26 Maslennikov has not taught wherein the switch instruction is a Java tableswitch instruction. Java has taught wherein the switch instruction is a Java tableswitch instruction (Java" tableswitch"). It would have been obvious to one of ordinary skill in the art at the time of the invention to write a program in Java to be used on a system which uses predicate registers, or predicate processing. Java is a commonly used programming language, and one of ordinary skill in the art would have been motivated to take advantage of its many features on a variety of processors because of its popularity among programmers.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention write a program in Java to be used on a system which uses predicate registers, or predicate processing because Java is a common programming language that is widely used in the art.

12. Referring to claims 8 and 27 Maslennikov has not taught wherein the method is implemented in a Java Virtual Machine. Java has taught wherein the method is implemented in a Java Virtual Machine (Java" tableswitch"). It would have been obvious to one of ordinary skill in the art at the time of the invention to write a program in Java to be used on a system which uses predicate registers, or predicate processing. Java is a commonly used programming language,

and one of ordinary skill in the art would have been motivated to take advantage of its many features on a variety of processors because of its popularity among programmers. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention write a program in Java to be used on a system which uses predicate registers, or predicate processing because Java is a common programming language that is widely used in the art.

Allowable Subject Matter

13. Claims 2-6, 10, 12-16, 19, 21-25, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
14. Referring to claims 2, 12, and 21 and all of their dependent claims, Maslennikov and Java has not taught individually, or in combination, wherein having the one ore more parameters includes a range of branch address, the range being defined by a high value and a low value, determining if the low value is lower than a lowpredicate, setting a first register value to $2^{**}(\text{lowpredicate}-\text{low value})$ if the low value is lower than the lowpredicate, and setting the first register value to $2^{**}(\text{lowpredicate})$ if the low value is not zero, where lowpredicate is a predicate register number of a lowest numbered predicate register.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as follows. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR 1.111(c).

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Muthukumar et al., U.S. Patent Number 6,571,385, has taught early exit transformations for software pipelining using predicate registers.

Sinclair, et al, "ASIC Design for Conditional Nested Loops with Predicate Registers", has taught using predicate registers in determining results to retire for conditional branching.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A Harkness whose telephone number is 703-305-7579. The examiner can normally be reached on 8:00 A.M. – 5:30 P.M. with every other Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on 703-305-9712. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

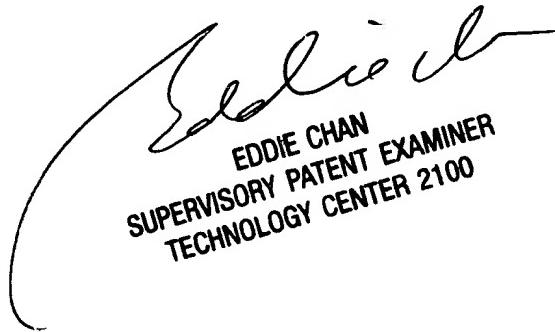
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-7579.

Charles Allen Harkness

Examiner

Art Unit 2183

September 10, 2003



EDDIE CHAN
SUPERVISORY PATENT EXAMINER
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